

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
22 January 2004 (22.01.2004)

PCT

(10) International Publication Number
WO 2004/006679 A2

(51) International Patent Classification⁷: A01N 65/00

(21) International Application Number:

PCT/CA2003/001002

(22) International Filing Date: 14 July 2003 (14.07.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/195,131 12 July 2002 (12.07.2002) US

(71) Applicant (for all designated States except US): CODENA INC. [CA/CA]; 426 Chemin des Patriotes, Saint-Charles-sur-Richelieu, Quebec J0H 2G0 (CA).

(72) Inventor; and

(75) Inventor/Applicant (for US only): CHIASSON, Hélène [CA/CA]; 4 Louis Liénard de Beaujeu, Saint-Jean-sur-Richelieu, Québec J2W 1T5 (CA).

(74) Agent: MBM & CO.; 300- 1055 West Hastings Street, Vancouver, British Columbia V6E 2E9 (CA).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: EXTRACTS DERIVED FROM CHENOPODIUM PLANTS AND USES THEREOF

The chemical content of three lots or pools of oil samples extracted from whole plant parts above root (00MC-21P, 00MC-24P and 00M-29P).

Compounds	00MC-21P	00MC-24P ¹	00M-29P	Compounds tested for activity
α -pinene	0,30	0,34	0,23	✓
camphene	0,03	—	—	
myrcene	0,26	0,32	0,25	✓
α -terpinene	56,69	58,03	60,84	✓
β -cymene	18,13	18,13	14,62	✓
limonene	11,65	12,36	14,67	✓
γ -terpinene	0,63	0,64	0,62	✓
α -thujone			0,75	
4-terpineol	0,08	—	Tr.	✓
trans- μ -mentha-2,8-dien-1-ol	—	—	0,57	
cis- μ -mentha-2,8-dien-1-ol	—	—	0,33	
α -terpineol	0,16	0,27	0,08	✓
nerol	0,21	0,20	0,38	✓
carveol	0,64	1,34	0,08	✓
escaridole	9,86	6,39	3,63	✓
t-cinnamaldehyde	0,09	0,14	Tr.	
thymol	0,34	0,51	Tr.	✓
carvacrol	0,28	0,47	Tr.	✓
isoescaridole	0,30	0,23	0,81	✓
β -caryophyllene	0,32	0,44	Tr.	✓
	99,98	99,81	98,86	

¹ Lot used presently for all bioassays for efficacy data and tests for toxicological data presented for registration.

WO 2004/006679 A2

WHAT IS CLAIMED IS:

1. An essential oil extract derived from *Chenopodium sp.* comprising, α -terpinene, ρ -cymene, limonene, carvacrol, carveol, nerol, thymol, and carvone, and having acaricidal activity.
2. The essential oil extract according to claim 1, wherein said essential oil extract has insecticidal activity.
3. The essential oil extract according to claim 1 or 2, wherein said essential oil extract has fungicidal activity.
4. The essential oil extract according to claim 1, wherein said essential oil extract demonstrates a residual effect that meets general recommendations of Integrated Pest Management programs.
5. The essential oil extract according to claim 1, wherein said plant material is from *Chenopodium ambrosioides*.
6. A pesticidal composition, comprising an effective amount of the essential oil extract of claim 1 and a suitable emulsifier, spreader and/or sticking agent, and carrier.
7. The pesticidal composition according to claim 6, comprising between 0.125% to 10% (by volume) essential oil extract.
8. The pesticidal composition according to claim 7, comprising between 0.25% to 5% (by volume) essential oil extract.
9. The pesticidal composition according to claim 6, wherein said composition comprises between 5% to 50% (by volume) of said essential oil extract.
10. The pesticidal composition according to claim 9, comprising between 10% to 25% (by volume) of said essential oil extract.

11. The pesticidal composition according to claim 10, comprising between 1% to 15% (by volume) of a suitable emulsifier, and between 50% to 70% (by volume) of a suitable carrier or solvent.
12. The pesticidal composition according to claim 11, comprising between 2% to 20% (by volume) of a suitable spreader and/or sticking agent.
13. A pesticidal composition, comprising between 30% to 50% (by volume) of the essential oil extract of claim 1, between 0.5% to 25% (by volume) of a suitable emulsifier, and between 10% to 50% (by volume) water.
14. A method for controlling phytophagous acari, which comprises applying to a locus where control is desired an acaricidally-effective amount of the pesticidal composition of claim 6.
15. A method for controlling phytophagous insects, which comprises applying to a locus where control is desired an insecticidally-effective amount of the pesticidal composition of claim 6.
16. A method for controlling phytophagous fungi, which comprises applying to a locus where control is desired an insecticidally-effective amount of the pesticidal composition of claim 6.
17. The method according to any one of claims 14, 15, or 16, wherein said locus is soil.
18. The method according to any one of claims 14, 15, or 16, wherein said locus is a plant.